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Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Navy	DATE: February 2012
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APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE							
1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>				PE 0603506N: <i>Surface Ship Torpedo Defense</i>							
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	49.625	118.764	93.346	-	93.346	81.156	31.956	33.821	24.054	Continuing	Continuing
0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	49.625	118.764	93.346	-	93.346	81.156	31.956	33.821	24.054	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Surface Ship Torpedo Defense (SSTD) program provides a detect-to-engage hardkill torpedo defense capability through two development programs. The Countermeasure Anti-Torpedo (CAT) program develops a canisterized Anti-Torpedo Torpedo (ATT) as an ACAT II program. The Torpedo Warning System (TWS) develops the required ship systems as an ACAT III program. Additionally, the program will require fielding of the AN/SLQ-25X (NIXIE) (Previously identified as AN/SLQ-25D) system as a tow point for the TWS towed sensors. This requires interfacing NIXIE power and data transfer with the TWS.

The program will focus on first providing torpedo defense capability to High Value Units (HVV). The SSTD system will be installed on one CVN and one Combat Logistics Force (CLF) ship (both HVVs) with initial operational capability (IOC) in FY 2018.

Additionally, the program will develop and field six surface ship torpedo defense prototype systems (TWS/CAT) on CVNs. Each prototype consists of one TWS and 10 CATs. The 6 systems are required to be accelerated due to the lack of torpedo defense on HVVs which has been exacerbated by recent real-world events and evolving threats. The systems provide a hard-kill torpedo defense capability in advance of the IOC as part of the program of record. To accomplish this effort, the department reprogrammed \$9.9 million of FY 2010 funds and received a prior approval reprogramming for an additional \$7.9 million of FY 2010 funds. The first two prototypes are expected to deliver in FY14, two systems in FY15, and two systems in FY16.

Finally, the program will deliver one hybrid prototype system in FY 13. This is in addition to the six prototype systems discussed above. The system will deliver some capability to a forward deployed CVN asset before the first prototype system is available.

At-sea demonstrations of the Torpedo Detection Classification and Localization (TDCL) systems conducted in FY06 through FY09 led to a CRUDES TDCL draft system specification in FY09 which is being modified to accommodate installation of a system for HVVs. Additionally, in 2nd Qtr FY10, prototype TDCL systems were tested at sea to collect data to characterize the ability of towed active and passive sonar arrays to detect and track threat targets both actively and passively in adverse conditions. System manufacturing readiness levels indicate FY18 as most acceptable risk for delivery.

Successful at-sea testing of the Anti-Torpedo Torpedo Engineering Development Model (EDM-1) in FY06 through FY09 facilitates completion of the ATT EDM-2 design in early FY12. The EDM-2 design will be the ATT included in the six fielded prototype systems.

UNCLASSIFIED

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BA 4: Advanced Component Development & Prototypes (ACD&P)					
B. Program Change Summary (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total
Previous President's Budget	57.796	118.764	83.739	-	83.739
Current President's Budget	49.625	118.764	93.346	-	93.346
Total Adjustments	-8.171	-	9.607	-	9.607
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-0.913	-			
• Program Adjustments	-	-	9.898	-	9.898
• Rate/Misc Adjustments	-	-	-0.291	-	-0.291
• Congressional General Reductions	-0.258	-	-	-	-
Adjustments					
• Congressional Directed Reductions	-7.000	-	-	-	-
Adjustments					
Change Summary Explanation					
Technical and Schedule: Congress reduced FY 11 funding due to MS B delay. Added FY 10 funds in support of surface ship torpedo defense (SSTD) prototype systems commensurate with PB 12 program redirection. Accelerated the IOC for CAT from FY 2021 to FY 2018 and delayed the IOC for the TWS from FY 2017 to 2018 to better align capabilities. Added funds in FY 2103 to support the hybrid prototype system.					

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Exhibit R-2A, RDT&E Project Justification: PB 2013 Navy									DATE: February 2012		
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)				R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense				PROJECT 0225: Surface Ship Torpedo Defense (SSTD)			
COST (\$ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
0225: Surface Ship Torpedo Defense (SSTD)	49.625	118.764	93.346	-	93.346	81.156	31.956	33.821	24.054	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		

A. Mission Description and Budget Item Justification

The Surface Ship Torpedo Defense (SSTD) program provides a detect-to-engage hardkill torpedo defense capability through two development programs. The Countermeasure Anti-Torpedo (CAT) program develops a canisterized Anti-Torpedo Torpedo (ATT) as an ACAT II program. The Torpedo Warning System (TWS) develops the required ship systems as an ACAT III program. The system also requires fielding the AN/SLQ-25X (NIXIE) system (previously called the AN/SLQ-25D) as a tow point for the TWS towed sensors. This requires interfacing NIXIE power and data transfer with TWS.

SSTD system will be installed on one CVN and one Combat Logistics Force (CLF) ship (both HVUs) with an IOC of FY2018. The first increment of the CAT will be installed on HVUs in FY2018.

Additionally, the program will develop and field six prototype surface ship torpedo defense prototype systems CVNs and one hybrid prototype system on a forward deployed CVN.

B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)

	FY 2011	FY 2012	FY 2013
Title: Countermeasure Anti-Torpedo (CAT)	28.738	74.892	51.394
Articles:	0	30	15
FY 2011 Accomplishments: Completed ATT EDM-2 detailed design, subsystem and system level testing including fabrication of EDM-1 components unaffected by the EDM-2 design.			
FY 2012 Plans: Continue EDM-2 fabrication in support of subsystem builds and land-based testing. Subsystem testing will support delivery of first technical data package and Baseline EDM-2 Design. Continue Insensitive Munitions testing, firing module Qualification Testing and mechanical Integration Testing. Continue conducting Weapons System Explosive Safety Review Board (WSESRB) review of the CAT program.			
FY 2013 Plans: Complete the CAT technical data package. Complete land based testing of EDM-2 and start CAT in-water testing. Conduct initial subsystem integration testing. Procure materials for prototype delivery to include AURE and warhead. Complete fabrication of			

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B. Accomplishments/Planned Programs (\$ in Millions, Article Quantities in Each)									FY 2011	FY 2012	FY 2013
subsystems for EDM-2 CATs in support of early prototype delivery in FY14. Complete shipyard and Alteration Installation Team (AIT) installation of Hybrid Prototype System on a forward deployed CVN.											
Title: Torpedo Warning System (TWS) Articles: FY 2011 Accomplishments: Completed design and build of towed sensor EDM to be tested in FY12. Developed Torpedo Detection Classification and Localization (TDCL) algorithms. FY 2012 Plans: Conduct lake testing for towed array performance evaluation. Continue development of Torpedo Detection Classification and Localization (TDCL) algorithms. Commence design of fire control and CAT ready-stowage racks for the HVU application. FY 2013 Plans: Continue fire control and CAT ready-stowage racks design and testing. Conduct sea test on sensors and algorithms developed in FY11 and FY12. Complete fabrication of EDM prototype systems in support of early prototype delivery in FY14.									18.800 0	41.872 3	40.952 1
Title: AN/SLQ-25X (previously AN/SLQ-25D) Articles: FY 2011 Accomplishments: Developed combined Acquisition Strategy and Acquisition Plan in support of RFP issued for AN/SLQ-25X procurement. FY 2012 Plans: Issue competitive contract for development and procurement of two AN/SLQ-25X systems to support FY14 testing of TWS systems. FY 2013 Plans: Complete development of AN/SLQ-25X and Capability Design Review.									2.087 3	2.000 0	1.000 0
Accomplishments/Planned Programs Subtotals									49.625	118.764	93.346
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• OPN/221300: SSTD	0.000	1.257	10.716	0.000	10.716	12.402	18.251	17.174	28.713	222.248	439.058
• WPN/311300: SSTD	2.500	0.000	2.700	0.000	2.700	2.698	26.796	29.096	26.099	Continuing	Continuing

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D. Acquisition Strategy CAT Program: Under the ATTDs program In FY09 and FY10, the CAT project completed a Systems Requirements Review (SRR) and Preliminary Design Review (PDR) on the second Engineering Development Model (EDM-2) design. The Applied Research Laboratory (ARL) is now preparing the detailed EDM-2 design. ARL will complete the EDM-2 design in early FY12. A Critical Design Review (CDR) will be held after the design is complete. ARL will fabricate test articles and 60 total EDM-2 CATs in support of the prototype fielding. Integration testing will begin in FY13 and continue through delivery of the prototype CATs. A complete Technical Data Package (TDP) will be prepared. With the shift in IOC to FY18, program will enter Milestone C decision in late FY14 (as a result of CAT IOC shift to FY18, acquisition strategy changed to enter acquisition process at Milestone C). Additionally, in late FY14 a competitive fixed price contract will be awarded to build Low Rate Initial Production (LRIP) units. These will support Operational Testing beginning in FY17 for an FY18 IOC. TWS Program: In FY09 and FY10, a towed sensor system specification was developed and 2 sea tests were conducted on Navy destroyers that demonstrated the ability of three different passive sonar ranging techniques and demonstrated the benefit of new torpedo detection sonar waveforms. Data from these tests is being applied to the HVU application, and the sensor specification is being modified to meet the increased capability required for HVU ships. Development and production of the new sensors is being conducted by 3 Phoenix and Ultra Ocean Systems. A complete sensor set was delivered in 2nd QTR FY12 to support an at sea test in the 3rd QTR FY12. At the same time, a ready-stowage rack, and fire control systems are being developed by NUWC and NSWC. All of these components will be brought together for integration in FY13. This integration will support fabrication and fielding of the prototype systems. Land based integration with the AN/SLQ-25X system is planned in FY14. This testing will inform a Milestone C decision in late FY14. A single competitive contract will be awarded for TWS LRIP systems to support Operational Testing with an FY18 IOC. AN/SLQ-25X System: The AN/SLQ-25X system specification (cabinet, winch, tow cable, towed body) for integration with the previous ATTDs program was completed in 2nd QTR FY10. This specification was modified for integration with the TWS system for use on HVU ships. This specification was used for a competitive contract RFP in FY11 to develop and build two AN/SLQ-25X systems. This contract will use FY12 RDT&E funding to accomplish the engineering development and FY10 OPN to build the systems. The first system will deliver in 4th QTR FY13 and will be installed on a CVN ship to support TWS testing. E. Performance Metrics Torpedo Effectiveness for the CAT Torpedo Detection Classification and Localization (TDCL) False Alert Rate TDCL probability of correct classification TWS System Availability		

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Exhibit R-3, RDT&E Project Cost Analysis: PB 2013 Navy **DATE:** February 2012

APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense	PROJECT 0225: Surface Ship Torpedo Defense (SSTD)
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Product Development (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Systems Engineering	WR	NUWC:Newport, RI	27.304	4.500	Nov 2011	5.600	Nov 2012	-		5.600	Continuing	Continuing	Continuing
Systems Engineering ATT Dev.	C/CPFF	PSU/ARL:State College, PA	128.499	48.800	Nov 2011	34.338	Nov 2012	-		34.338	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	JHU/APL:Baltimore , MD	1.740	0.400	Feb 2012	0.200	Feb 2013	-		0.200	Continuing	Continuing	Continuing
Systems Engineering Warhead Dev.	WR	NSWC:Indian Head, MD	34.841	12.100	Nov 2011	12.100	Nov 2012	-		12.100	Continuing	Continuing	Continuing
Systems Engineering	WR	NUWC:Keyport,WA	14.775	8.000	Nov 2011	11.300	Nov 2012	-		11.300	Continuing	Continuing	Continuing
Systems Engineering TDCL	C/CPFF	Ultra:Braintree, MA	11.640	5.000	Feb 2012	3.000	Feb 2013	-		3.000	0.000	19.640	Continuing
Systems Engineering ATT	WR	ONR:Arlington, VA	1.680	0.100	Jan 2012	0.100	Jan 2013	-		0.100	Continuing	Continuing	Continuing
Systems Engineering TDCL	C/CPFF	AAC:Hauppauge, NY	3.830	-		0.200	Jan 2013	-		0.200	0.000	4.030	Continuing
Systems Engineering	WR	OPTEVFOR:Norfolk, VA	0.743	0.150	Feb 2012	0.150	Feb 2013	-		0.150	Continuing	Continuing	Continuing
Systems Engineering	C/CPFF	ArgonST:Manassas, VA	0.800	-		-		-		-	0.000	0.800	Continuing
Systems Engineering TDCL	WR	NSWC:Dahlgren, VA	5.247	2.000	Nov 2011	1.500	Nov 2012	-		1.500	0.000	8.747	Continuing
Systems Engineering TDCL	WR	SPAWAR:San Diego, CA	1.320	1.000	Dec 2011	1.000	Dec 2012	-		1.000	0.000	3.320	Continuing
Systems Engineering	C/CPFF	UT/ARL:Not Specified	0.600	0.250	Feb 2012	0.500	Feb 2013	-		0.500	0.000	1.350	Continuing
Systems Engineering	C/CPFF	Alion:Bridgeport, CT	2.526	3.784	Dec 2011	3.700	Dec 2012	-		3.700	0.000	10.010	Continuing
Systems Engineering	WR	NUWC DET:Norfolk, VA	2.525	2.300	Nov 2011	2.300	Nov 2012	-		2.300	0.000	7.125	
Systems Development	C/CPFF	3 Phoenix:Fairfax, VA	14.904	26.780	Dec 2011	14.358	Dec 2012	-		14.358	0.000	56.042	Continuing
Integrated Logistic Spt	WR	NSWC Crane:Crane, IN	0.384	0.350	Dec 2011	0.350	Dec 2012	-		0.350	0.000	1.084	Continuing
Prototype Development	C/FFP	TBD:TBD	2.087	0.500	Dec 2011	-		-		-	0.000	2.587	
Subtotal			255.445	116.014		90.696		-		90.696			

Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Earned Value Mgmt Spt	C/CPAF	Pioneer:Virigina	0.050	0.250	Dec 2011	0.250	Dec 2012	-		0.250	0.000	0.550	

UNCLASSIFIED

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Management Services (\$ in Millions)				FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
Program Management Support	C/FFP	EG&G:Gaithersburg, Md.	2.846	-		-		-		-	0.000	2.846	Continuing
DAWDF	Various	Not Specified:Not Specified	0.237	-		-		-		-	0.000	0.237	Continuing
Program Management Support	C/CPAF	Tech-Marine:Burke, VA	6.393	2.200	Jan 2012	2.100	Jan 2013	-		2.100	0.000	10.693	Continuing
Travel	Various	PMS 415:Not Specified	0.534	0.100	Nov 2011	0.100	Nov 2012	-		0.100	0.000	0.734	Continuing
Program Management Support	C/CPFF	SPA:Alexandria, VA	0.255	0.200	Mar 2012	0.200	Jan 2013	-		0.200	0.000	0.655	Continuing
Subtotal			10.315	2.750		2.650		-		2.650	0.000	15.715	
			Total Prior Years Cost	FY 2012		FY 2013 Base		FY 2013 OCO		FY 2013 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			265.760	118.764		93.346		-		93.346			
Remarks													

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Exhibit R-4, RDT&E Schedule Profile: PB 2013 Navy		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: Research, Development, Test & Evaluation, Navy BA 4: Advanced Component Development & Prototypes (ACD&P)	R-1 ITEM NOMENCLATURE PE 0603506N: Surface Ship Torpedo Defense	PROJECT 0225: Surface Ship Torpedo Defense (SSTD)

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Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 1319: <i>Research, Development, Test & Evaluation, Navy</i> BA 4: <i>Advanced Component Development & Prototypes (ACD&P)</i>	R-1 ITEM NOMENCLATURE PE 0603506N: <i>Surface Ship Torpedo Defense</i>	PROJECT 0225: <i>Surface Ship Torpedo Defense (SSTD)</i>	

Schedule Details

Events by Sub Project	Start		End	
	Quarter	Year	Quarter	Year
Proj 0225				
AN/SLQ-25X: AN/SLQ-25X - RFP	2	2011	1	2012
AN/SLQ-25X: AN/SLQ-25X - CONTRACT AWARD	1	2012	1	2012
AN/SLQ-25X: AN/SLQ-25X - PRODUCTION UNITS 1 & 2 (EDM)	3	2012	4	2013
AN/SLQ-25X: AN/SLQ-25X SRR	3	2012	3	2012
AN/SLQ-25X: AN/SLQ-25X - PDR	1	2013	1	2013
AN/SLQ-25X: AN/SLQ-25X - CAPABILITY DESIGN REVIEW (CDR)	4	2013	4	2013
AN/SLQ-25X: AN/SLQ-25X - PRODUCTION	4	2013	4	2017
TWS: TWS - Passive Ranging	1	2011	3	2011
TWS: TWS - CAS TDCL	1	2011	4	2011
TWS: TWS - MS B ILA	3	2011	3	2011
TWS: TWS - TWS Baselines	2	2011	3	2013
TWS: TWS - System Readiness Review (SRR)	4	2011	4	2011
TWS: TWS - SSTRP	4	2011	4	2011
TWS: TWS - WSESRB	4	2011	4	2011
TWS: TWS - Milestone B	4	2011	4	2011
TWS: TWS - Lake Test	1	2012	1	2012
TWS: TWS - Integrated Design Review (IDR)	1	2012	1	2012
TWS: EDM-1	1	2012	2	2013
TWS: TWS - WSESRB2	2	2012	2	2012
TWS: TWS - Torpedo Acquisition Group (TAG) TDCL Tech	3	2012	3	2012
TWS: TWS - Preliminary Design Review (PDR)	3	2012	3	2012

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012	
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	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
TWS: TWS - SSTRP2	1	2013	1	2013
TWS: TWS - EDM-2/3	1	2013	4	2013
TWS: TWS - TAG TCG	2	2013	2	2013
TWS: TWS - EDM-4	3	2013	2	2014
TWS: TWS - TAG TCG Ready Stow Group (RSG)	4	2013	4	2013
TWS: TWS - Capability Design Review (CDR)	4	2013	4	2013
TWS: TWS - SSSTRP3	1	2014	1	2014
TWS: TWS - WSESRB3	1	2014	1	2014
TWS: TWS - Technical Readiness Review (TRR)	2	2014	2	2014
TWS: TWS - 25X Integration	2	2014	2	2015
TWS: TWS - EDM Dry Run	2	2014	2	2014
TWS: TWS - RP	2	2014	2	2014
TWS: TWS - EDM Demo	4	2014	4	2014
TWS: TWS - Milestone C	4	2014	4	2014
TWS: TWS - LRIP	1	2015	2	2017
TWS: TWS - TWS/25X In Water Tests	2	2015	4	2016
TWS: TWS - LRIP Tech Eval	4	2016	4	2016
TWS: TWS - SSSTRP4	1	2017	1	2017
TWS: TWS - WSESRB4	1	2017	1	2017
TWS: TWS - OT	3	2017	4	2017
CAT: CAT - EDM-2 Design	1	2011	1	2012
CAT: CAT AURE Design	1	2011	2	2012
CAT: CAT - FABRICATE EDM-2 HARDWARE	1	2012	2	2013
CAT: CAT - HWTDP/IDR	1	2012	1	2012
CAT: CAT - LAND BASED SYSTEM TEST	2	2012	2	2013

UNCLASSIFIED

Exhibit R-4A, RDT&E Schedule Details: PB 2013 Navy			DATE: February 2012	
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	Start		End	
Events by Sub Project	Quarter	Year	Quarter	Year
CAT: CAT AURE FABRICATION	2	2012	2	2013
CAT: CAT - IN WATER TESTING	2	2013	3	2014
CAT: CAT EDM2 Design Delivery 1 - Hybrid Prototype System	3	2013	3	2013
CAT: CAT FISTRP	1	2014	1	2014
CAT: CAT EDM DRY RUN	1	2014	1	2014
CAT: CAT SSTRP	2	2014	2	2014
CAT: CAT WSESRB	2	2014	2	2014
CAT: CAT EDM2 Design Delivery 2	2	2014	2	2014
CAT: CAT - EDM Demo	3	2014	3	2014
CAT: CAT EDM2 Design Delivery 3	4	2014	4	2014
CAT: CAT - Milestone C	4	2014	4	2014
CAT: CAT - LRIP 1	1	2015	4	2016
CAT: CAT EDM2 Design Delivery 4	2	2015	2	2015
CAT: CAT EDM2 Design Delivery 5	4	2015	4	2015
CAT: CAT - DT	2	2016	3	2017
CAT: CAT EDM2 Design Delivery 6	2	2016	2	2016
CAT: CAT - LRIP 2	3	2016	3	2017
CAT: CAT EDM2 Design Delivery 7	4	2016	4	2016